OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD

BOARD STAFF'S REVIEW OF THE PETITION

By: Don Austin

Petition File No.: 529

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Title: Senior Safety Engineer
Date: July 27, 2012

STAFF EVALUATION

Introduction

On March 16, 2012, the Occupational Safety and Health Standards Board (Board) received a petition by email from Don Austin, Subsidiary EHS Manager, (Petitioner) representing Basalite Concrete Products, LLC. The Petitioner requested that the Board amend Title 8, California Code of Regulations, Group 15, Article 105, Appendix F of the General Industry Safety Orders (GISO), concerning application of age correction values to audiograms, as referenced in Section 5097(d)(9).

Labor Code Section 142.2 permits interested persons to propose new or revised standards concerning occupational safety and health and requires the Board to consider such proposals and to render its decision no later than six months following their receipt. In accordance with Board policy, the purpose of this evaluation is to provide the Board with relevant information upon which to base a reasonable decision.

History

Board staff could find no other petitions in Board's archives relating to the application of age correction values to audiograms.

Reason for the Petition

GISO Section 5097, Hearing Conservation Program, in relevant part, requires employers to make audiometric testing available to all employees whose exposures equal or exceed the action level of an 8-hour time-weighted average sound level (TWA) of 85 decibels measured on the A-scale (slow response) or, equivalently, a dose of fifty percent. Each employee's annual audiogram is compared to that employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift (STS) has occurred.

Section 5097(d)(9) provides that, in determining whether a STS has occurred, allowance may be made for the contribution of aging (presbycusis) to the change in hearing level by correcting the annual audiogram according to the procedure described in Appendix F, Determination and Application of Age Correction to Audiograms.

The petitioner states that age correction values have not been updated since the inception of the hearing standard in the early 1980's, when employees were retiring between the ages of 55 and 60. Since that time, not only has the retirement age been raised to the upper 67-68 range, but older workers are working longer due to the severe impact of the economy over the last five years, and people are living longer in general. It is no longer uncommon to see employees working into their seventies or re-entering the workforce. He noted that although the hearing standard correction value ends at age 60, hearing continues to degenerate after that.

The petitioner opined that the age correction values should be updated and the values increased to age 75. To leave them unchanged is unfair to businesses that are required to accept OSHA

recordable threshold hearing shifts for older worker because of an antiquated standard where correction values stop and do not reflect the current and future workforce.

The petitioner therefore proposed that the age correction values in Appendix F be updated and the values increased to age 75; however he did not offer or propose any extended age correction values or alternate age correction methods.

National Consensus Standards

ANSI A10.46-2007 – Hearing Loss Prevention for Construction and Demolition Workers, applies to all construction and demolition workers with potential noise exposures (continuous, intermittent and impulse) of 85 dBA and above, and is intended to help employers prevent occupational hearing loss among construction and demolition workers. Topics covered include identification of hazardous exposures, controlling the hazards, hearing protection devices, audiometry, training and record keeping. It defines an STS as a shift of 10 dB or more at any 2000, 3000, or 4000 Hz compared to the baseline audiogram. The standard does not make any mention of age correction values in evaluating whether an STS has occurred.

ANSI S3.44-1996 – Determination of Occupational Noise Exposure and Estimation of Noise-Induced Hearing Impairment. This standard presents, in statistical terms, the relationship between noise exposures and changes in hearing threshold levels for a noise exposed population. It includes a method of predicting hearing threshold levels associated with age; however, the method is statistical in nature. Furthermore, Annexes A & B, which provide two databases which may be used to calculate the hearing threshold level only provide statistical data to age 60.

Federal OSHA Standards

29 CFR 1910.95(g) describes federal audiometric testing program requirements, and Appendix F, Tables F-1 and F-2, list age correction values in decibels for males and females respectively. Paragraph (g)(7) provides that each employee's annual audiogram shall be compared to the employee's baseline audiogram to determine if it is valid and if a STS as defined in paragraph (g)(10) has occurred. Paragraph (g)(10), Standard threshold shift, states that a STS is a change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear. Subparagraph (g)(10)(ii) adds that, in determining whether a STS has occurred, allowance may be made for the contribution of aging (presbycusis) to the change in hearing level by correcting the annual audiogram according to the procedure described in Appendix F: "Calculation and Application of Age Correction to Audiograms."

GISO Article 105, Section 5097(d) is the state counterpart for federal 29 CFR 1910.95(g)(7), and Article 105, Appendix F, Table F, Age Correction Values in Decibels for Males and Females, is the state counterpart of 1910.95 Appendix F, Tables F-1 and F-2. The age correction factors for both the state and federal tables do not change beyond age 60.

Division of Occupational Safety and Health (Division) Report

The Division's evaluation states that GISO Section 5097 is currently at least as effective as

federal OSHA's hearing conservation program, and the state Table F age correction values are identical to those of federal OSHA. The Division notes that age correction of annual audiograms is permissible, but not mandated by either Cal/OSHA or federal OSHA.

The Division stated that it is important to distinguish between an STS and a recordable hearing loss. The state's hearing conservation program requirements are aimed at preventing occupational hearing loss and the early identification of an STS to intervene before it becomes recordable. Title 8, Section 14300.10 provides that, if an employee's audiogram reveals that the employee has experienced a work-related STS in hearing in one or both ears, and the employee's total hearing level is 25 decibels (dB) or more above audiometric zero (averaged at 2000, 3000, and 4000 Hz) in the same ear(s) as the STS, then the case must be recorded on the Cal/OSHA Form 300.

The Division's evaluation also stated that NIOSH currently advises against using the existing table because it has aggregate data that is not statistically supportable. NIOSH indicated to the Division it is making a significant effort to revise the table based on National Health and Nutrition Examination Survey (NHANES) data.

The Division's opinion is that if the range of Table F age correction values were to be increased, the time required for a significant threshold shift to be noted would be further prolonged and would render Section 5097 less protective than 29 CFR 1910.95, and therefore, California might not be at least as effective as the OSHA standards.

The Division concluded that the petition to increase the upper age correction values in Table F is problematic for several reasons. There is no recognized consensus method for age-correcting individual audiograms. NIOSH and the American Academy of Audiology have recommended against using the OSHA methods with the existing tables. Furthermore, the petitioner did not propose any revised age correction values or age correction methods. Lastly, extending the table by increasing age correction values would further prolong the time required for a significant threshold shift to be noted and would render Cal/OSHA's noise standard to be less effective than the equivalent federal standard. Consequently, the Division recommended that the petition be denied.

Staff Evaluation

As previously noted, Section 5097(d)(9) permits, but does not require, the use of age correction factors in determining whether a STS has occurred. Board staff has been unable to locate nationally recognized standard age correction factors beyond the age of 60. ANSI S3.44-1996 methods of predicting age-related hearing loss do not go beyond the age of 60. Therefore, Board staff's opinion is that the most significant obstacle to granting this petition for consideration by an advisory committee is the lack of any nationally recognized age correction factors beyond the age of 60.

The Division has learned that NIOSH is making a significant effort to revise the age correction table based on NHANES data. Board staff also notes that the American Academy of Audiology has recommended against using the OSHA methods with the existing tables. If NIOSH is, in

fact, attempting to revise the age correction table and perhaps extend it beyond the age of 60, such an effort would certainly be appropriate due to the aging work force and economic factors that are keeping persons in the workforce longer. Board staff believes that, rather than for the state to attempt to extrapolate age-related corrections with no nationally recognized standards, it would be more appropriate to allow time for NIOSH or federal OSHA to address this matter.

Recommendation

For the reasons stated above Board staff recommends that this petition be DENIED.